

1 **CLAIMS**

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3 **1.** A method comprising:

4 installing a pre-installation environment on a target computer that is desired
5 to be imaged with a new operating system;

6 re-booting the target computer in the pre-installation environment;

7 deleting an old operating system from within the pre-installation
8 environment;

9 installing the new operating system from within the pre-installation
10 environment; and

11 re-booting the target computer in the new operating system;

12 said acts being effective to in-place image the target computer with the new
13 operating system.

14
15 **2.** The method of claim 1, wherein the act of installing the pre-installation
16 environment comprises installing the pre-installation environment in a same disk
17 partition as the old operating system.

18
19 **3.** The method of claim 1 further comprising capturing data and state for
20 migration to the new operating system and migrating said captured data and state
21 to the new operating system.

1 4. The method of claim 1 further comprising capturing machine data for
2 migration to the new operating system and migrating said captured machine data
3 to the new operating system.

4
5 5. The method of claim 1 further comprising capturing user data for migration
6 to the new operating system and migrating said captured user data to the new
7 operating system.

8
9 6. The method of claim 1 further comprising capturing user state for migration
10 to the new operating system and migrating said captured user state to the new
11 operating system.

12
13 7. The method of claim 1 further comprising capturing client data for migration
14 to the new operating system and migrating said captured client data to the new
15 operating system.

16
17 8. One or more computer readable media having computer readable
18 instructions thereon which, when executed by one or more processors, cause the
19 one or more processors to perform the method of claim 1.

20
21 9. A set of application program interfaces (APIs) configured to perform the
22 method of claim 1.
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1 **10.** A system comprising:

2 one or more target computers each having one or more computer-readable
3 media;

4 computer readable instructions on the one or more computer readable
5 media which, when executed by one or more processors, cause the one or more
6 processors to perform a method comprising:

7 capturing data for migration to a new operating system, said data
8 comprising one or more of machine data, user data, and client data;

9 installing a pre-installation environment on a target computer that is
10 desired to be imaged with a new operating system;

11 re-booting the target computer in the pre-installation environment;

12 deleting an old operating system from within the pre-installation
13 environment;

14 installing the new operating system from within the pre-installation
15 environment;

16 re-booting the target computer in the new operating system;

17 migrating said captured data to the new operating system;

18 said acts being effective to in-place image the target computer with
19 the new operating system.

1 **11.** A method comprising:

2 using a multi-phase image deployment process to remotely image multiple
3 target computers with a new operating system, said multi-phase deployment
4 process comprising at least:

5 a preparation phase in which various data is captured for migration
6 to the new operating system;

7 a wipe and load phase in which an old operating system is deleted
8 and the new operating system is installed in place; and

9 a restoration phase in which captured data is migrated to the new
10 operating system.

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12 **12.** The method of claim 11, wherein the preparation phase can capture data
13 associated with one or more of machine state, client state, user state and/or user
14 data.

15
16 **13.** The method of claim 12, wherein machine state data can comprise one or
17 more of computer name, domain, and network settings.

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19 **14.** The method of claim 12, wherein client state data can comprise Site
20 association or code, client GUID, and an associated distribution point.

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22 **15.** The method of claim 12, wherein user state data can comprise a user
23 profile.

1 **16.** The method of claim 12, wherein user data can comprise folders and files
2 desired for migration and network share settings.

3
4 **17.** The method of claim 11, wherein the preparation phase comprises
5 installing a pre-installation environment from which in place installation can take
6 place.

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8 **18.** The method of claim 11, wherein the preparation phase comprises
9 installing a pre-installation environment from which in place installation can take
10 place, wherein the pre-installation environment comprises WinPE™.

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12 **19.** The method of claim 11, wherein the wipe and load phase comprises
13 enabling a target computer to connect with at least one of a number of destination
14 points from which an image file containing the new operating system image is
15 obtained.

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17 **20.** The method of claim 11, wherein the multi-phase image deployment
18 process is configured to generate status reports during each of the phases, said
19 status reports being transmittable to a system administrator to facilitate
20 management of the image deployment process.

1 **21.** The method of claim 11, wherein the multi-phase image deployment
2 process is configured to generate status reports during each of the phases, said
3 status reports being transmittable to a system administrator to facilitate
4 management of the image deployment process, wherein status reports are
5 generated by an old client associated with the old operating system, and a new
6 client associated with the new operating system.

7
8 **22.** One or more computer readable media having computer readable
9 instructions thereon which, when executed by one or more processors, cause the
10 one or more processors to perform the method of claim 11.

11
12 **23.** A set of application program interfaces (APIs) configured to perform the
13 method of claim 11.

14
15 **24.** A system comprising:
16 one or more target computers each having one or more computer-readable
17 media;
18 computer readable instructions on the one or more computer readable
19 media which, when executed by one or more processors, cause the one or more
20 processors to perform a method comprising:
21 using a multi-phase image deployment process to remotely image
22 multiple target computers with a new operating system, said multi-phase
23 deployment process comprising at least:
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1 a preparation phase in which various data is captured for migration
2 to the new operating system;

3 a wipe and load phase in which an old operating system is deleted
4 and the new operating system is installed in place; and

5 a restoration phase in which captured data is migrated to the new
6 operating system.

7
8 **25.** A method comprising:

9 notifying a target computer user that a new operating system image is
10 desired to be deployed on the target computer; and

11 providing the user with an option to postpone image deployment on the
12 target computer.

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14 **26.** The method of claim 25 further comprising providing the user with an
15 option to disallow image deployment on the target computer.

16
17 **27.** The method of claim 25 further comprising providing the user with an
18 option to immediately begin an image deployment process on the target computer.

19
20 **28.** The method of claim 25 further comprising providing the user with an
21 option to disallow image deployment process on the target computer, and an
22 option to immediately begin an image deployment process on the target computer.

1 **29.** The method of claim 25, wherein the act of providing comprises allowing
2 the user to specify a postponement duration.

3
4 **30.** One or more computer readable media having computer readable
5 instructions thereon which, when executed by one or more processors, cause the
6 one or more processors to perform the method of claim 25.

7
8 **31.** A set of application program interfaces (APIs) configured to perform the
9 method of claim 25.

10
11 **32.** A method comprising:
12 notifying a target computer user that a new operating system image is
13 desired to be deployed on the target computer;
14 providing the user with an option to at least (1) disallow image deployment
15 on the target computer, (2) immediately begin an image deployment process on
16 the target computer, and (3) postpone image deployment on the target computer;
17 receiving user input that pertains to the desired image deployment; and
18 performing image deployment pursuant to the user's input.

19
20 **33.** One or more computer readable media having computer readable
21 instructions thereon which, when executed by one or more processors, cause the
22 one or more processors to perform the method of claim 32.

1 **34.** A set of application program interfaces (APIs) configured to perform the
2 method of claim 32.

3
4 **35.** A method comprising:
5 creating an operating system image that is to be deployed across a plurality
6 of target machines, said image comprising at least one image file;
7 creating an image package that contains said one image file, at least a
8 deployment environment, tools and configuration files for installing the image on
9 said target machines; and
10 distributing the image package to one or more distribution points from
11 which individual target machines can access the image package.

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13 **36.** The method of claim 35, wherein said deployment environment comprises
14 WinPE™.

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16 **37.** The method of claim 35, wherein said one or more distribution points
17 comprise one or more file shares.
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1 **38.** The method of claim 35 further comprising generating an advertisement for
2 the image package and sending the advertisement to one or more of the target
3 machines, said advertisement being configured to advise target machine users that
4 a new operating system is desired to be deployed on their machine.

5
6 **39.** One or more computer readable media having computer readable
7 instructions thereon which, when executed by one or more processors, cause the
8 one or more processors to perform the method of claim 35.

9
10 **40.** A set of application program interfaces (APIs) configured to perform the
11 method of claim 35.

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13 **41.** A system comprising:
14 one or more computers each having one or more computer-readable media;
15 computer readable instructions on the one or more computer readable
16 media which, when executed by one or more processors, cause the one or more
17 processors to perform a method comprising:

18 creating an operating system image that is to be deployed across a
19 plurality of target machines, said image comprising one or more image
20 files;

21 creating an image package that contains said one or more image files
22 and at least a deployment environment for installing the image on said
23 target machines; and

24 distributing the image package to one or more distribution points
25 from which individual target machines can access the image package.

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2 **42.** A method comprising:

3 creating an operating system image that is to be deployed across a plurality
4 of target machines, said image comprising one or more image files;

5 creating an image package that contains said one or more image files and at
6 least a deployment environment for installing the image on said target machines;

7 distributing the image package to one or more distribution points from
8 which individual target machines can access the image package;

9 notifying a target machine user that a new operating system image is
10 desired to be deployed on the target machine; and

11 providing the user with an option to postpone image deployment on the
12 target machine.
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14 **43.** The method of claim 42 further comprising providing the user with an
15 option to disallow image deployment on the target machine.
16

17 **44.** The method of claim 42 further comprising providing the user with an
18 option to immediately begin an image deployment process on the target machine.
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20 **45.** The method of claim 42 further comprising providing the user with an
21 option to disallow image deployment process on the target machine, and an option
22 to immediately begin an image deployment process on the target machine.
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1 46. The method of claim 42, wherein the act of providing comprises allowing
2 the user to specify a postponement duration.

3
4 47. One or more computer readable media having computer readable
5 instructions thereon which, when executed by one or more processors, cause the
6 one or more processors to perform the method of claim 42.

7
8 48. A set of application program interfaces (APIs) configured to perform the
9 method of claim 42.

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11 49. A system comprising:
12 one or more computers each having one or more computer-readable media;
13 computer readable instructions on the one or more computer readable
14 media which, when executed by one or more processors, cause the one or more
15 processors to perform a method comprising:

16 creating an operating system image that is to be deployed across a
17 plurality of target machines, said image comprising one or more image
18 files;

19 creating an image package that contains said one or more image files
20 and at least a deployment environment for installing the image on said
21 target machines;

22 distributing the image package to one or more distribution points
23 from which individual target machines can access the image package;

24 notifying a target machine user that a new operating system image is
25 desired to be deployed on the target machine;

1 providing the user with options to postpone, disallow, and
2 immediately begin image deployment on the target machine.

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4 **50.** A method comprising:

5 creating an operating system image of a new operating system that is to be
6 deployed across a plurality of target machines, said image comprising one or more
7 image files;

8 creating an image package that contains said one or more image files and at
9 least a deployment environment for installing the image on said target machines;

10 distributing the image package to one or more distribution points from
11 which individual target machines can access the image package;

12 installing the deployment environment on a target machine that is desired to
13 be imaged with the new operating system;

14 re-booting the target machine in the deployment environment;

15 deleting an old operating system from within the deployment environment;

16 installing the new operating system from within the deployment
17 environment; and

18 re-booting the target machine in the new operating system;

19 said acts being effective to in-place image the target machine with the new
20 operating system.

21
22 **51.** The method of claim 50 further comprising capturing data for migration to
23 the new operating system and migrating said captured data to the new operating
24 system.
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1 **52.** The method of claim 50 further comprising capturing machine data for
2 migration to the new operating system and migrating said captured machine data
3 to the new operating system.

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5 **53.** The method of claim 50 further comprising capturing user data for
6 migration to the new operating system and migrating said captured user data to the
7 new operating system.

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9 **54.** The method of claim 50 further comprising capturing user state for
10 migration to the new operating system and migrating said captured user state to
11 the new operating system.

12
13 **55.** The method of claim 50 further comprising capturing client data for
14 migration to the new operating system and migrating said captured client data to
15 the new operating system.

16
17 **56.** One or more computer readable media having computer readable
18 instructions thereon which, when executed by one or more processors, cause the
19 one or more processors to perform the method of claim 50.

20
21 **57.** A set of application program interfaces (APIs) configured to perform the
22 method of claim 50.
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1 **58.** A system comprising:

2 one or more computers each having one or more computer-readable media;
3 computer readable instructions on the one or more computer readable
4 media which, when executed by one or more processors, cause the one or more
5 processors to perform a method comprising:

6 creating an operating system image of a new operating system that is
7 to be deployed across a plurality of target machines, said image comprising
8 one or more image files;

9 creating an image package that contains said one or more image files
10 and at least a deployment environment for installing the image on said
11 target machines;

12 distributing the image package to one or more distribution points
13 from which individual target machines can access the image package;

14 installing the deployment environment on a target machine that is
15 desired to be imaged with the new operating system;

16 re-booting the target machine in the deployment environment;

17 deleting an old operating system from within the deployment
18 environment;

19 installing the new operating system from within the deployment
20 environment; and

21 re-booting the target machine in the new operating system;

22 said acts being effective to in-place image the target machine with
23 the new operating system.

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2 **59.** A method comprising:

3 creating an operating system image of a new operating system that is to be
4 deployed across a plurality of target machines, said image comprising one or more
5 image files;

6 creating an image package that contains said one or more image files and at
7 least a deployment environment for installing the image on said target machines;

8 distributing the image package to one or more distribution points from
9 which individual target machines can access the image package; and

10 using a multi-phase image deployment process to remotely image, from at
11 least one distribution point, multiple target computers with the new operating
12 system, said multi-phase deployment process comprising at least:

13 a preparation phase in which various data is captured for migration
14 to the new operating system;

15 a wipe and load phase in which an old operating system is deleted
16 and the new operating system is installed in place; and

17 a restoration phase in which captured data is migrated to the new
18 operating system.

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20 **60.** The method of claim 59, wherein the preparation phase comprises
21 installing a pre-installation environment from which in place installation can take
22 place.
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1 **61.** The method of claim 59, wherein the wipe and load phase comprises
2 enabling a target machine to connect with at least one of the distribution points to
3 obtain the image package.

4
5 **62.** The method of claim 59, wherein the multi-phase image deployment
6 process is configured to generate status reports during each of the phases, said
7 status reports being transmittable to a system administrator to facilitate
8 management of the image deployment process.

9
10 **63.** The method of claim 59, wherein the multi-phase image deployment
11 process is configured to generate status reports during each of the phases, said
12 status reports being transmittable to a system administrator to facilitate
13 management of the image deployment process, wherein status reports are
14 generated by an old client associated with the old operating system, and a new
15 client associated with the new operating system.

16
17 **64.** One or more computer readable media having computer readable
18 instructions thereon which, when executed by one or more processors, cause the
19 one or more processors to perform the method of claim 59.

20
21 **65.** A set of application program interfaces (APIs) configured to perform the
22 method of claim 59.
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1 66. A system comprising:

2 one or more computers each having one or more computer-readable media;
3 computer readable instructions on the one or more computer readable
4 media which, when executed by one or more processors, cause the one or more
5 processors to perform a method comprising:

6 creating an operating system image of a new operating system that is
7 to be deployed across a plurality of target machines, said image comprising
8 one or more image files;

9 creating an image package that contains said one or more image files
10 and at least a deployment environment for installing the image on said
11 target machines;

12 distributing the image package to one or more distribution points
13 from which individual target machines can access the image package; and

14 using a multi-phase image deployment process to remotely image,
15 from at least one distribution point, multiple target computers with the new
16 operating system, said multi-phase deployment process comprising at least:

17 a preparation phase in which various data is captured for
18 migration to the new operating system;

19 a wipe and load phase in which an old operating system is
20 deleted and the new operating system is installed in place; and

21 a restoration phase in which captured data is migrated to the
22 new operating system.
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1 67. The system of claim 66, wherein the multi-phase image deployment
2 process is configured to generate status reports during each of the phases, said
3 status reports being transmittable to a system administrator to facilitate
4 management of the image deployment process.

5
6 68. The system of claim 66, wherein the multi-phase image deployment
7 process is configured to generate status reports during each of the phases, said
8 status reports being transmittable to a system administrator to facilitate
9 management of the image deployment process, wherein status reports are
10 generated by an old client associated with the old operating system, and a new
11 client associated with the new operating system.

1
2 **69.** A method comprising:

3 remotely deploying a new operating system on one or more target
4 computers by sending image packages containing an image of the new operating
5 system to one or more distribution points and staging deployment from the one or
6 more distribution points through multiple phases comprising at least:

7 a preparation phase in which various data is captured for migration
8 to the new operating system;

9 a wipe and load phase in which an old operating system is deleted
10 and the new operating system is installed; and

11 a restoration phase in which captured data is migrated to the new
12 operating system;

13 generating status reports within each of the phases, at least some of the
14 status reports describing events that occur during an associated phase; and

15 transmitting the status reports to a system administrator.
16

17 **70.** The method of claim 69, wherein the wipe and load phase installs the new
18 operating system in place.
19

20 **71.** The method of claim 69, wherein said act of transmitting the status reports
21 is accomplished, at least in part, by an old client executing on an operating system
22 that is replaced, and a new client executing on the new operating system.
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1 **72.** The method of claim 69, wherein the preparation phase can capture data
2 associated with one or more of machine state, client state, user state, and/or user
3 data.

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5 **73.** The method of claim 69, wherein the preparation phase comprises
6 installing a pre-installation environment from which in place installation can take
7 place.

8
9 **74.** One or more computer readable media having computer readable
10 instructions thereon which, when executed by one or more processors, cause the
11 one or more processors to perform the method of claim 69.

12
13 **75.** A set of application program interfaces (APIs) configured to perform the
14 method of claim 69.

15
16 **76.** A system comprising:
17 one or more computers each having one or more computer-readable media;
18 computer readable instructions on the one or more computer readable
19 media which, when executed by one or more processors, cause the one or more
20 processors to perform a method comprising:

21 remotely deploying a new operating system on one or more target
22 computers by sending image packages containing an image of the new
23 operating system to one or more distribution points and staging deployment
24 from the one or more distribution points through multiple phases
25 comprising at least:

1 a preparation phase in which various data is captured for
2 migration to the new operating system;

3 a wipe and load phase in which an old operating system is
4 deleted and the new operating system is installed; and

5 a restoration phase in which captured data is migrated to the
6 new operating system;

7 generating status reports within each of the phases, at least some of
8 the status reports describing events that occur during an associated phase;
9 and

10 transmitting the status reports to a system administrator.